

Application No.: 10/621,440

REMARKS

Claim 7 stands rejected under non-statutory obviousness-type double patenting over claim 7 of USP No. 6,658,560. Though traversed, a terminal disclaimer is attached hereto, without prejudice, to obviate this rejection. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claims 7-8 stand rejected under 35 U.S.C. § 102 as being anticipated by Eickemeyer et al. '460 ("Eickemeyer"). Claim 7 is independent. This rejection is respectfully traversed for the following reasons.

Claim 7 recites in pertinent part, "instruction parallelizing/executing means for executing the two instructions, *which designate the first execution unit as a target*, in parallel *by allocating one of the two instructions to the second execution unit*, wherein the parallelizing/executing means is capable of converting one of the two instructions to another equivalent instruction that designates the second execution unit" (emphasis added). The Examiner alleges that the claimed "instruction parallelizing/executing means" and operational capability thereof corresponds to the compound analyzer 22 shown in Figs. 6 and 7 of Eickemeyer. However, it is respectfully submitted that Eickemeyer does not suggest that the compound analyzer 22 is capable of converting one of the two instructions to another equivalent instruction that designates the second execution unit. That is, Eickemeyer discloses only a means by which to determine which instructions can be executed in parallel, but does not suggest how to convert those instructions which can NOT be executed in parallel.

Rather, the compound analyzer 22 of Eickemeyer merely determines which is the last instruction that can be processed in parallel in a superscalar processor in order to increase the

Application No.: 10/621,440

number of instructions that can be processed in parallel. Indeed, all of the referenced portions of Eickemeyer cited by the Examiner on page 4, lines 3-7 of the outstanding Office Action merely describe processing used to determine compatibility for respective instructions to be processed in parallel. However, Eickemeyer does not suggest how to execute two instructions in parallel *where the two instructions designate the same execution unit*, let alone in the manner specified in claim 7. Instead, Eickemeyer simply determines compatibility for parallel processing for two instructions, and if none, moves on; whereas the present invention can effect parallel processing for two instructions which may initially not be compatible for parallel processing (e.g., two instructions which designate the same execution unit).

According to one exemplary embodiment of the present invention, it can be made possible to provide the capability of converting one of two instructions which designate the same execution unit, which would preclude parallel execution thereof, to another equivalent instruction which designates a different execution unit so as to enable parallel execution of the two instructions. For example, in one exemplary embodiment of the present invention illustrated in Figures 21,23 of Applicants' drawings, of the following two instructions "asl 2, R0" (a second instruction slot of the No. 2 instruction) and "asl 2, R2" (a second instruction slot of the No. 3 instruction), the instruction "asl 2, R2" can be converted to "add R2, R2" (a first instruction slot of the No. 2 instruction) shown in Fig. 23 (*see* corresponding disclosure in Applicants' specification). On the other hand, Eickemeyer discloses only how to determine instructions which can be executed in parallel generally, but is silent as to instruction-conversion when instructions can not be processed in parallel because they designate the same execution unit. That is, Eickemeyer does not suggest how to execute instructions in parallel that initially can not be executed in parallel (e.g., because they designate the same execution unit), and discloses only

Application No.: 10/621,440

the quantitative determination of instructions executable in parallel without enabling those instructions (e.g., by conversion) which are not executable in parallel to be executable in parallel.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently (noting that "inherency may not be established by probabilities or possibilities", *Scaltech Inc. v. Retec/Tetra*, 178 F.3d 1378 (Fed. Cir. 1999)), in a single prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986), based on the forgoing, it is submitted that Eickemeyer does not anticipate claim 7, nor any claim dependent thereon.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 7 is patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also patentable. In addition, it is respectfully submitted that the dependent claims are patentable based on their own merits by adding novel and non-obvious features to the combination.

Based on the foregoing, it is respectfully submitted that all pending claims are patentable over the cited prior art. Accordingly, it is respectfully requested that the rejection under 35 U.S.C. § 102 be withdrawn.

CONCLUSION

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's

Application No.: 10/621,440

amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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